

Appln. No. 09/216,378
Amendment dated October 31, 2005
Reply to Office Action mailed August 4, 2005

REMARKS

Reconsideration is respectfully requested.

Entry of the above amendments is courteously requested in order to place all claims in this application in allowable condition and/or to place the non-allowed claims in better condition for consideration on appeal.

Claims 1 through 5, 7 through 27, and 29 through 38 remain in this application. Claims 6 and 28 have been cancelled. No claims have been withdrawn or added.

The Examiner's rejections will be considered in the order of their occurrence in the Office Action.

Paragraphs 2 and 3 of the Office Action

Claims 30 and 38 have been objected to for the informalities noted in the Office Action.

The dependency of claim 38 has been changed from "claim 1" to "claim 24" to resolve the duplication in claim scope.

Withdrawal of the objection to claims 30 and 28 is therefore respectfully requested.

Paragraphs 4 through 7 of the Office Action

Claims 1 through 5, 7 through 20, 22, 24 through 27, and 29 through 38 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Lambrecht in view of Denenberb and further in view of Eatwell.

Claims 21 and 23 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Lambrecht in view of Denenberb and Eatwell and further in view of Markow.

Appln. No. 09/216,378
Amendment dated October 31, 2005
Reply to Office Action mailed August 4, 2005

Claims 24 through 27 and 37 have been rejected under 35 U.S.C. Section 103(a) as being unpatentable over Eatwell in view of Denenberb.

Claim 1 requires "a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headphone compatible audio output connection to reduce headphone noise". Claim 8 requires "wherein the mixed signal is applied to a standard headphone compatible audio output connection to reduce the ambient noise in the headphones". Claim 13 requires "mixing the noise cancellation signal with an audio signal for provision to a standard headphone compatible audio output connection to reduce headphone noise". Claim 16 requires "a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to a standard headset compatible audio output connection to reduce headphone noise". Claim 24 requires "a digital signal processor for mixing the noise cancellation signal with an audio signal provided from a desired source for provision to an audio output connection for a standard headset".

In the rejection of the claims in the Office Action, it was alleged that the Denenberg patent suggests the use of "a standard headphone compatible audio output connection" required by the claims. However, the portion of the Denenberg patent that is cited as teaching this requirement of the claimed invention (as well as the rest of the disclosure) does not appear to describe the "standard headphone compatible audio output connection" required by the claims. The Denenberg patent states at col. 1, line 60 through col. 2, line 20 (emphasis added):

An active noise canceling headset requires two independent, bi-directional communication links for its operation (one more one-way channel may be required if a boom microphone is used for out-going communications). Specific requirements of an Emergency vehicle headset are set forth including digital communication systems which are better suited to this application since it eliminates filters used in

Appln. No. 09/216,378
Amendment dated October 31, 2005
Reply to Office Action mailed August 4, 2005

the analog modulation and demodulation process that can introduce significant delays in the signal paths. The system requirements are: Bandwidth--Each ear requires a bi-directional communication channel at the sample rate used by the controller (about 10 kHz for the Siren Headset). If there is a need to have a microphone for outgoing communication, a one-way channel at the 10 kHz rate can be added (the anti-noise channels can simultaneously deliver in-coming communications to the wearer's ears with the anti-noise). The number of communication channels are multiplied by the maximum number of headsets worn in the same environment. Since each sample is a 12 bit word in this application four headsets can be supported by a communication system that can continuously handle a 1.5 million bits per second continuous throughput in each direction. This is within the state of the art for wireless data communication systems.

It is submitted that this discussion in the Denenberg patent does not describe a standard headphone compatible audio output connection, as the Denenberg system clearly contemplates a headphone connection that includes two channels of input and two channels of output, which is not provided by a standard headphone compatible audio output connection, which may include two channels for input to the headphones and possibly one channel of output if a microphone is included on the headphones (which is conventionally provided on a separate connection). One of ordinary skill in the art, considering the disclosure of Denenberg patent, would not consider a connection that provides bidirectional communication for each ear to be a standard audio output connection.

Further, claim 1 requires "a built-in microphone for detecting ambient noise". Claim 8 requires "detecting the ambient noise via a microphone built-in to the mobile computer system". Claim 13 requires "detecting environmental background noise via a microphone built-in to the computer". Claim 16 requires "a microphone built into the housing for detecting noise ambient to the housing". Claim 24 requires "a microphone integrated into the mobile computer for detecting ambient noise".

However, with respect to the inclusion of the Eatwell patent in the allegedly obvious combination, in contrast to the claimed invention, the

Appln. No. 09/216,378
Amendment dated October 31, 2005
Reply to Office Action mailed August 4, 2005

Eatwell patent, which is relied upon for allegedly suggesting the use of a built-in microphone, discusses the use of flat panel speakers integrated into the case of the computer itself for generating the noise canceling sounds. This reliance upon speakers built into the enclosure of the computer (and not separate headphones, for example), is critical to the creation of a "quiet zone" around the microphone on the enclosure in order to enhance the function of voice recognition software, which is the primary purpose of the Eatwell system. See, for example, Eatwell states at col. 3, lines 34 through 38 (emphasis added):

Another object is to combine active noise reduction and piezos in a personal computer to reduce fan noise, create a quiet zone around the microphone and/or the microphone arrays, improve voice recognition performance and improve duct tuning.

As the piezo speakers mounted on the enclosure are required to creating the "quite zone" around the microphone on the enclosure, the use of the microphone on the enclosure of Eatwell without also employing the speakers on the enclosure of Eatwell to create the "quiet zone" around the microphone violates the object of Eatwell. Eatwell further states at col. 6, 7 through 16 (emphasis added):

FIG. 11 illustrates another embodiment of the invention for a lap top computer application. The lower case 74 has piezoelectric elements 75 placed in the lower comer. Piezoelectric elements 76 and a microphone array consisting of three microphones 77, 78, 79 are placed in the lid 80 of the lap top computer. This is one means of achieving a portable multimedia system where the microphone system can be highly directional to reduce the effects of background noise in the voice recognition system. An active noise reduction system 107 is used to enhance provision of a quiet zone.

As the Eatwell patent clearly discusses the use of speakers on the computer enclosure in an array with the microphone on the computer enclosure for creating a "quiet zone" using an "active noise reduction system", it is submitted that one of ordinary skill in the art, considering the Eatwell patent, would not be motivated to incorporate a microphone in a computer enclosure without also incorporating the speakers that Eatwell teaches as

Appln. No. 09/216,378
Amendment dated October 31, 2005
Reply to Office Action mailed August 4, 2005

being necessary to create the "quiet zone" using the noise reduction system. Eatwell clearly links the function of the microphone in the enclosure to the speaker in the enclosure, and thus any attempt to incorporate the microphone of Eatwell on a system that has the speakers receiving the noise reduction signals on a headphone (rather than on the same computer enclosure as the microphone) would render the speakers receiving the noise reduction signals incapable of creating a "quiet zone" about the microphone. In view of Eatwell's clear teaching, one of ordinary skill in the art would not incorporate a microphone into a computer enclosure without also incorporating the speaker receiving the noise reduction signal also in the computer enclosure--which is clearly contrary to the requirements of the claims.

It is therefore submitted that the cited patents, and especially the allegedly obvious combination of Lambrecht, Denenberb, Eatwell and Markow set forth in the rejection of the Office Action, would not lead one skilled in the art to the applicant's invention as required by claims 1, 8, 13, 16, and 24, and therefore are submitted to be in condition for allowance.

Withdrawal of the §103(a) rejections of claims 1 through 5, 7 through 27, and 29 through 38 is therefore respectfully requested.

Appln. No. 09/216,378
Amendment dated October 31, 2005
Reply to Office Action mailed August 4, 2005

CONCLUSION

In light of the foregoing amendments and remarks, early reconsideration and allowance of this application are most courteously solicited.

Respectfully submitted,

WOODS, FULLER, SHULTZ & SMITH P.C.

Date: _____

Jeffrey A. Proehl (Reg. No. 35,987)
Customer No. 40,158
P.O. Box 5027
Sioux Falls, SD 57117-5027
(605)336-3890 FAX (605)339-3357